AMENDMENTS TO THE CLAIMS

1-2. (Cancelled)

3. (Currently Amended) An isolated ~~The~~ gene encoding a protein that catalyzes the biosynthesis of piperitol from pinoresinol and the biosynthesis of sesamin from the piperitol, the protein comprising ~~according to claim 1, wherein:~~

~~the protein includes at least one amino acid sequence selected from a group consisting of~~:

(a) an amino acid sequences of ~~corresponding to~~ SEQ ID NO~~S~~: 1, 64, or ~~and~~ 78; or~~, and~~

(b) an amino acid sequences that ~~have~~ has been modified by at least one of the substitution, deletion, insertion, and addition of one to 10 ~~or more~~ amino acids to ~~an~~the amino acid sequence of ~~corresponding to~~ SEQ ID NO: 1, 64, or ~~and~~ 78.

4. (Cancelled)

5. (Currently Amended) An isolated gene ~~including a~~ comprising a nucleotide ~~base~~ sequence ~~selected from a group consisting~~ of SEQ ID NO~~S~~: 2, 65, or ~~and~~ 79 as an open reading frame region.

6. (Cancelled)

7. (Currently Amended) The gene according to claim 3~~1~~, wherein~~:~~ the gene is derived from sesame.

8-10. (Cancelled)

11. (Currently Amended) A recombinant expression vector comprising the ~~including a~~ gene according to claim 3~~1~~.

12. (Currently Amended) A non-human transformant comprising a recombinant expression vector comprising the ~~including a~~ gene according to claim 3~~1~~.

13. (Currently Amended) A producing method of a protein, comprising:

producing the ~~a~~ transformant according to claim 12; and

recovering a protein from the transformant that catalyzes the biosynthesis of piperitol from pinoresinol and the biosynthesis of sesamin from the piperitol ~~biosynthesis of at least one of piperitol and sesamin~~.

14. (Currently Amended) ~~A~~ The transformant according to claim 12, wherein the transformant comprises a plant, its offspring and portions thereof.

15. (Currently Amended) A method of producing at least one of piperitol and sesamin, comprising: a step of introducing the ~~using a~~ gene according to claim 3~~1 or a protein encoded by such a gene~~ into a host cell.

16. (Currently Amended) A method of producing a non-human transformant containing an enhanced amount of lignan, comprising: a step of introducing the ~~using a~~ gene according to claim 3~~1~~ into a host cell.

17. (Currently Amended) A method of producing a plant containing an enhanced amount of at least one of piperitol and sesamin, comprising: a step of introducing the ~~using a~~ gene according to claim 31 into a host cell.

18. (Currently Amended) A method of producing a non-human transformant containing a reduced amount of lignan, comprising: a step of introducing the ~~using a~~ gene according to claim 31 into a host cell.

19. (Currently Amended) A method of producing a plant containing a reduced amount of at least one of piperitol and sesamin, comprising: a step of introducing the ~~using a~~ gene according to claim 31 into a host cell.

20. (Currently Amended) A method of cultivating sesame, comprising: a step of introducing the ~~using a~~ gene according to claim 31 into a host cell.

21. (Cancelled)